McGraw-Hill
Dictionary of
PHYSICS and
MATHEMATICS

Daniel N. Lapedes 1978

Editor in Chief

McGraw-Hill Book Company

New York   St. Louis   San Francisco

Auckland	New Delhi
Bogotá	Panama
Düsseldorf	Paris
Johannesburg	São Paulo
London	Singapore
Madrid	Sydney
Mexico	Tokyo
Montreal	Toronto

O *See* oxygen.

OASM system [PHYS] A system of electrical and mechanical units in which the fundamental quantities are electric resistance, electric current, time, and length, and the base units of these quantities are the ohm, ampere, second, and meter, respectively.

obelisk [MATH] A frustrum of a regular, rectangular pyramid.

object [OPTICS] A collection of points which may be regarded as a source of light rays in an optical system, whether it actually has this function (as in a real object) or does not (as in a virtual object).

object contrast [OPTICS] The ratio of the difference between the brightness of an object and of the background to the brightness of the background in an image or reproduction.

object glass *See* objective.

objective [OPTICS] The first lens, lens system, or mirror through which light passes or from which it is reflected in an optical system; many scientists exclude mirrors from this definition. Also known as object glass.

objective function [MATH] In nonlinear programming, the function, expressing given conditions for a system, which one seeks to minimize subject to given constraints.

objective grating [OPTICS] A series of equally spaced parallel wires placed over the objective lens of a telescope; photographic magnitudes of stars are calculated from the relative brightnesses of images in the resulting diffraction pattern.

objective prism [OPTICS] A large prism, usually having a small angle, which is placed in front of the objective of a photographic telescope to make spectroscopic observations.

objective probabilities [STAT] Probabilities determined by the long-run relative frequency of an event. Also known as frequency probabilities.

object space [OPTICS] The region of space where objects are located so that a given optical system can form images of them.

oblate ellipsoid *See* oblate spheroid.

oblate spheroid [MATH] The surface or ellipsoid generated by rotating an ellipse about one of its axes so that the diameter of its equatorial circle exceeds the length of the axis of revolution. Also known as oblate ellipsoid.

oblate spheroidal coordinate system [MATH] A three-dimensional coordinate system whose coordinate surfaces are the surfaces generated by rotating a plane containing a system of confocal ellipses and hyperbolas about the minor axis of one of the ellipses, together with the planes passing through the axis of rotation.

oblique angle [MATH] An angle that is neither a right angle nor a multiple of a right angle.

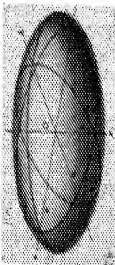**oblique astigmatism** *See* radial astigmatism.

OBLATE SPHEROID

Drawing of an oblate spheroid generated by rotating an ellipse about its minor axis, the z axis, of a coordinate system, with center of ellipse at origin and coordinate axes x and y along diameters 2a along each other; an ellipse at origin and 2b along x and y axes are equal to each other; an ellipse greater than axis of revolution 2c.